

**Changkat Changi Secondary School**  
**Physics Department**

**Unit 5: Turning effects of forces**

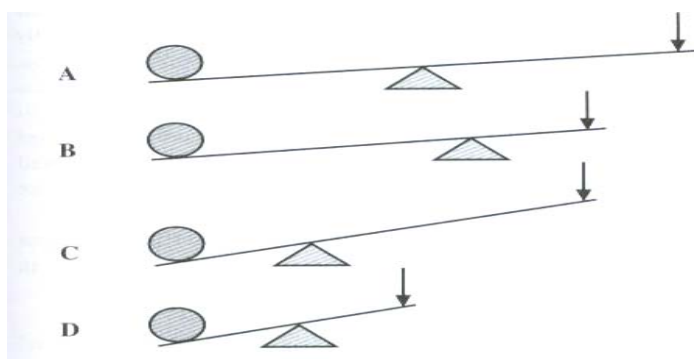
Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Worksheet 5.1 and 5.2**

**Section A—Multiple Choice Questions**

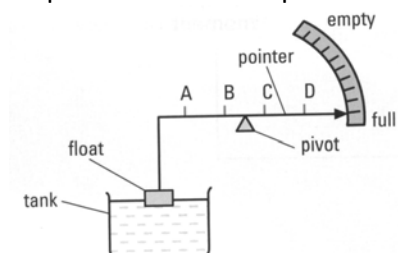
1. The moment of a force causes an object to  
**A** accelerate.                      **B** slow down.  
**C** turn.                                **D** stop moving.                      (       )

2. Which is easiest to lift?



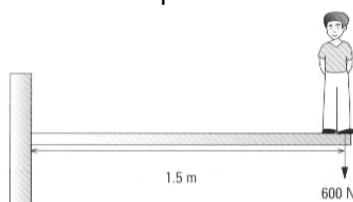
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3. The figure below shows a gauge which measures the amount of liquid in a tank. Where should the pivot be placed so that the pointer moves the greatest distance as the tank is emptied?



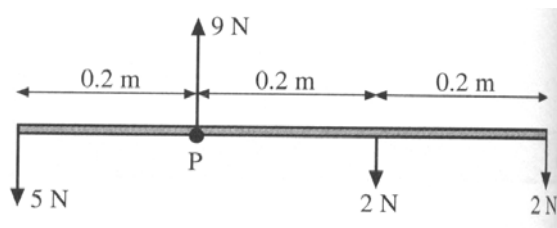
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4. The figure below shows a boy standing at one end of a plank that 1.5 m long. If the boy weighs 600 N, the moment due to his weight about the clamped end is



- A** 900 Nm    **B** 400 Nm    **C** 90 Nm    **D** 40 Nm                      (       )

5. The diagram shows a beam acted by several forces at different places.

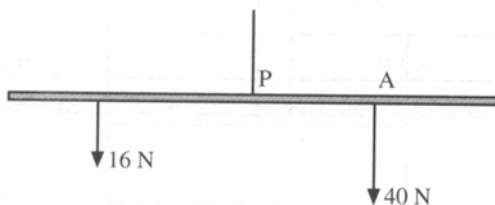


What will happen to the beam?

- A** It turns clockwise.
- B** It is moving upwards.
- C** It turns anticlockwise and moves downwards.
- D** It does not move.

(      )

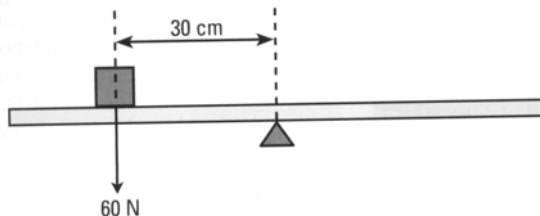
6. AP is 20 cm. How far must a weight of 16 N be placed from P to achieve equilibrium?



- A** 50 cm
- B** 40 cm
- C** 60 cm
- D** 30 cm

(      )

7. The figure below shows a uniform beam balanced at its centre point which has an object weighing 60 N placed 30 cm from its midpoint on the left.



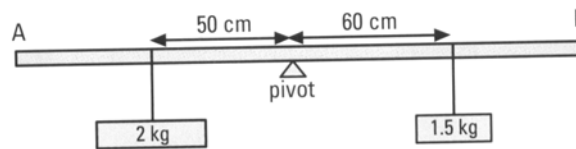
This will be balanced by a force of

- A** 30 N, downwards, 60cm from the centre on the right.
- B** 30 N, upwards, 60 cm from the centre on the right.
- C** 50 N, downwards, 40 cm from the centre on the right.
- D** 50 N, upwards, 40 cm from the centre on the left.

(      )

### Section B Structured question

8. The figure below shows a uniform beam AB pivoted at its mid – point. Two masses, 2 kg and 1.5 kg, were suspended from the beam.



a. Calculate the force exerted by each mass. Use  $g$  as  $10\text{N/kg}$ .

b. Hence, calculate the moment exerted by each mass.

c. Explain why the beam would not balance.

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d. Did end A move upwards or downwards?

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e. How far from the pivot should the 2 kg mass be placed in order to balance the beam?